

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

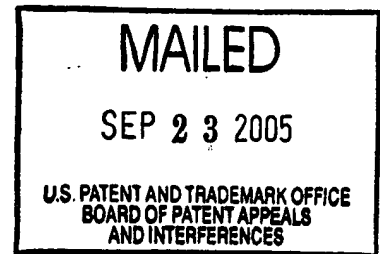
UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte MIKE G. ROEMMLER

Appeal No. 2005-2368
Application No. 09/802,707

ON BRIEF



Before KIMLIN, WARREN and JEFFREY T. SMITH, Administrative Patent Judges.
JEFFREY T. SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the Examiner's rejection of claims 1 to 27, all of the pending claims.¹ We have jurisdiction under 35 U.S.C. § 134.

¹ The subject matter of claims 1 to 27 have been rejected by the Examiner in the Office actions mailed February 24, 2003 and December 11, 2003, *inter alia*.

BACKGROUND

The Appellant's invention relates to a method of purifying an expanded graphite and an article comprising the purified expanded graphite. Representative claims 1, 11, 12 and 24 are reproduced below:

1. A method comprising:
expanding a graphite material from a first density to a smaller second density; and following expansion, purifying the graphite material at a temperature of at least 1750°C.
11. The method of claim 1, further comprising: following purifying, one of grinding and compacting the graphite material.
12. The method of claim 1, further comprising: following purifying, compacting the graphite material; and following compacting, grinding the graphite material.
24. An article of manufacture comprising graphite formed according to a method comprising: expanding a graphite material from a first density to a smaller second density; and following expansion, purifying the graphite material at a temperature of at least 1750°C.

CITED PRIOR ART

As evidence of unpatentability, the Examiner relies on the following references:

Junttila	4,533,086	Aug. 06, 1985
Matsumoto et al. (Matsumoto)	5,505,929	Apr. 09, 1996
Greinke et al. (Greinke)	5,582,811	Dec. 10, 1996

The Examiner rejected claims 1-11, 13-21 and 23-27 as unpatentable under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, as obvious over Greinke; claims

1-11, 13-21 and 23-27 as unpatentable under 35 U.S.C. § 103(a) as obvious over Greinke in view of Matsumoto; claims 12 and 22 under 35 U.S.C. § 103(a) as being obvious over Greinke in view of Junttila; and claims 12 and 22 as unpatentable under 35 U.S.C. § 103(a) as obvious over Greinke in view of Matsumoto, and further in view of Junttila. (Rejection, pp. 2-6).

We have carefully reviewed the claims, specification and applied prior art, including all of the arguments advanced by both the Examiner and Appellant in support of their respective positions. This review leads us to conclude that the Examiner's rejection under § 102(b) is not well founded. However, we affirm the rejections under § 103(a).

Rather than reiterate the conflicting viewpoints advanced by the Examiner and the Appellant regarding the above-noted rejection, we make reference to Appellant's Brief filed May 17, 2004, Reply Brief filed January 25, 2005, the Examiner's Answer mailed November 16, 2004 and the Rejection mailed December 11, 2003..

OPINION²

The Appellant's invention relates to a method of purifying an expanded graphite and an article comprising the purified expanded graphite. The method comprises expanding a graphite material from a first density to a smaller second density. The

² Appellant asserts that the claims can be divided into three separately patentable groups, Group I, claims 1-10, 13-20 and 23- 27; Group II, claims 11 and 21; and Group III, claims 12 and 22. (Brief, p. 3). We will discuss claims 1, 11 and 12 as representative of these groups.

specification discloses that graphite is subject to an intercalation process wherein graphite is mixed with an acid, such as fuming nitric acid, and subsequently thermally treated by heated to a temperature of 400 to 1200°C to form the expanded graphite. Following the thermal treatment, the expanded graphite can be compacted. Following the compacting, the expanded graphite is purified heating to a temperature of 1500 to 3000°C. (Specification, ¶¶ 0019 to 0022).

Claims 1-11, 13-21, and 23-27 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Greinke et al. (USPN 5,582,811).

The Examiner has found that Greinke discloses a method for forming a stable flexible graphite foil structure comprising the steps of intercalating particles of graphite flake, exfoliating the intercalated particles, compressing the particles into a flexible structure or sheet, heat treating the graphite structure and exposing the structure to a stabilizing reagent. Greinke teaches that this heat treatment is performed at a temperature above 600°C and several examples perform the heat treatment at a temperature of 1700°C . (Rejection, pp. 2-3).

The Examiner, Rejection page 3, acknowledges that Greinke does not explicitly teach the use of a temperature of at least 1750°C for the heat treatment. Thus, for this reason alone we reverse the rejection under § 102.

However, our determination that a reference does not anticipate the claims does not preclude us from determining that the same reference renders the appealed claims obvious.

Greinke discloses a process that is the same as the present invention except for purification (second heat treatment) of the expanded graphite at a temperature of 1750°C. Greinke discloses that the purification of expanded graphite occurs at a temperature above 600°C and exemplifies the temperature of 1700°C. Specifically, Greinke discloses that the second heat treatment is used to remove hydrophillic acid groups. (Col. 5, ll. 38-43). A person of ordinary skill in the art would have reasonably expected that graphite can be purified at a temperature of 1750°C to remove hydrophillic acid groups. Moreover, in cases involving overlapping ranges, we and our predecessor court have consistently held that even a slight overlap in range establishes a *prima facie* case of obviousness. *In re Geisler*, 116 F.3d 1465, 1469, 43 USPQ2d 1362, 1365 (Fed. Cir. 1997) (acknowledging that a claimed invention was rendered *prima facie* obvious by a prior art reference whose disclosed range (50-100 Angstroms) overlapped the claimed range (100-600 Angstroms)). We have also held that a *prima facie* case of obviousness exists when the claimed range and the prior art range do not overlap but are close enough such that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985). In light of that case law, we conclude that a *prima facie* case of obviousness was made out in this case.

We note that Appellant has not argued that the claimed temperature provides unexpected results. (See Briefs generally).

The subject matter of claims 11 and 12, i.e., Groups II and III, is directed to processing steps which occur after the purification heat treatment. Appellant argues that Greinke does not teach or suggest any steps following the second heat treatment. (Brief, pp. 9 and 10). The Examiner cited the Junttila reference for disclosing known methods of grinding graphite materials to produce a fine particle size.

A review of the art cited throughout the present record shows the use of expanded graphite was known to those of ordinary skill in the art.³ The prior art of record establishes that persons of ordinary skill in the art recognize that expanded graphite compositions are useful when compressed into various shapes or as powder.⁴ Thus, we determine that one of ordinary skill in the art is imputed with knowledge regarding the suitability of forming powders and compressed articles from expanded graphite. It therefore would have been obvious to one of ordinary skill at the time of invention to perform the grinding stage of Junittila on the graphite material of Greinke in order to produce graphite particles suitable for various applications.

³ It is axiomatic that admitted prior art in an applicants' specification may be used in determining the patentability of a claimed invention. (*In re Nomiya*, 509 F.2d 566, 570-71, 184 USPQ 607, 611-12 (CCPA 1975)); and that consideration of the prior art cited by the Examiner may include consideration of the prior art found in applicants' specification. (*In re Davis*, 305 F.2d 501, 503, 134 USPQ 256, 258 (CCPA 1962); cf., *In re Hedges*, 783 F.2d 1038, 1039-40, 228 USPQ 685, 686 (Fed. Cir. 1986)).

⁴ See U.S. patents 1,137,373 and 3,492,197 cited in the background of the invention section of the specification.

Regarding the article of claim 24, it is well settled that when a claimed product reasonably appears to be substantially the same as a product disclosed by the prior art, the burden is on the Applicant to prove that the prior art product does not necessarily or inherently possess characteristics attributed to the claimed product. *In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990); *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977). For the reasons stated above we determine that Greinke discloses a process which produces an article that renders the claimed invention *prima facie* obvious under section 103. Therefore, the burden has been shifted to Appellant to show that the claimed article is patentably distinct from that disclosed by Greinke. See *Spada*, supra and *Best*, supra. However Appellant has not relied on evidence which establishes that the claimed article is patentably distinct from the article of Greinke.




For the foregoing reasons and those set forth by the Examiner, having given due weight to Appellant's arguments, based on the totality of the record we determine that the preponderance of evidence weighs in favor of obviousness. Accordingly, the Examiner's rejections under 35 U.S.C. § 103 are affirmed.⁵

⁵ We also affirm the rejection of claims 1-11, 13-21 and 23-27 under 35 U.S.C. § 103(a) as obvious over the combined teachings of Greinke and Matsumoto as well as the rejection of claims 12 and 22 under 35 U.S.C. § 103(a) over the combined teachings of Greinke, Matsumoto and Junttila. The addition of the Matsumoto references does not detract from our above determinations.

TIME FOR TAKING ACTION

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1)(iv)(effective Sep. 13, 2004; 69 Fed. Reg. 49960 (Aug. 12, 2004); 1286 Off. Gaz. Pat. Office 21 (Sep. 7, 2004)).

Affirmed

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EDWARD C. KIMLIN)	
Administrative Patent Judge)	
)	
CHARLES F. WARREN)	
Administrative Patent Judge)	
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JEFFREY T. SMITH)	
Administrative Patent Judge)	
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Appeal No. 2005-2368
Application No. 09/802,707

Page 9

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